

REMARKS

Claims 1-7, 10-12, 26, 27, and 29-31 were pending prior to this Response. By the present communication, no new claims have been added, claims 1 and 31 have been amended to define Applicants' invention with greater particularity, and claim 27 has been canceled. Support for the amended claims may be found throughout the specification, e.g., on page 6, at lines one through two; page 11, at lines 16 through 17; Figures 4(b) and 4(c), and claims as originally filed. Accordingly, upon entry of the present amendment, claims 1-7, 10-12, 26, and 29-31 will be pending and under consideration in this application.

Rejection under 35 U.S.C. §112, 2nd Paragraph

Applicants respectfully traverse the rejection of claim 27 under 35 U.S.C. §112, second paragraph on the ground of alleged indefiniteness. Specifically, the Office Action asserts that claim 27 lacks antecedent basis with regard to the term "the pressure vessel." Without acquiescing to the rationale provided by the Office, and in order to further prosecution of the instant application, Applicants have canceled claim 27, thereby rendering the rejection moot.

Rejections under 35 U.S.C. §102(b)

Applicants respectfully traverse the rejection of claims 1-7, 11, 27, 29, and 30 under 35 U.S.C. §102(b) as allegedly anticipated by Mertens (DE 19714790; hereinafter "Mertens").

To anticipate, a single reference must inherently or expressly teach each and every element of claimed invention (see, *In re Spada*, 15 USPQ2d 1655 (Fed Cir. 1990); *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); and MPEP § 2131).

The Office Action alleges Mertens teaches each and every element of the apparatus as claimed. Without acquiescing to the reasoning presented in the Office Action, and to expedite

prosecution of the instant application, Applicants have amended independent claim 1 to recite:
"An apparatus for dissolving or suspending a substance in a solvent comprising:

an outer chamber for containing a dense gas, wherein the outer chamber is an autoclave;

an inlet for supplying the dense gas as a solvent, wherein the inlet is configured such that the dense gas is introduced through a straight shaft and delivered to the center of the apparatus;

a porous chamber within the outer chamber for containing a substance for dissolution or suspension with the solvent, the porous chamber having a wall which allows passage of solvent and the substance dissolved or suspended in the solvent; and

an outlet for removing solvent and solution and/or dispersion from the outer chamber and a turbulence means for creating turbulence within the porous chamber, wherein the turbulence creating means comprises a drive means to rotate the porous chamber within the outer chamber."

Mertens generally discloses an apparatus for use in regenerating contaminated air filters from automobiles. The device of Mertens employs two air nozzles/inlets on the interior and exterior of the porous chamber, labeled 19 and 21, respectively in Figure 2 of the document. The nozzles/inlets of Mertens are bent or angular such that air/gas is delivered to the apparatus orthogonal to the axis (nozzle 19) or angularly to the axis (nozzle 21). Orthogonal delivery nozzle (nozzle 19) of Mertens is intended for the express purpose of delivering gas in a direction perpendicular to the axial walls of the filter such that the particulate matter is blown outward and away from the filter. Nozzle 21 of Mertens is configured in an angular arrangement with regard to the axis of the apparatus such that the particulate matter is quasi scraped off the exterior axial sides of the filter. In contrast, the apparatus of the instant claims requires that the nozzle/inlet is straight, or configured parallel to the rotational axis of the apparatus in order to deliver gas directly to the center of the apparatus. In view of the foregoing discussion, Applicants

respectfully submit that Mertens fails to disclose each and every limitation of the apparatus as claimed. Accordingly, reconsideration and withdrawal of the rejection are requested.

Rejections under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejection of claim 12 under 35 U.S.C. §103 as allegedly obvious over Mertens (DE 19714790; hereinafter "Mertens") in view of Pesiri et al. (US 6,916,389; hereinafter "Pesiri").

The U.S. Supreme Court decision in *KSR International v. Teleflex Inc.* (82 USPQ 2d 1385), modified the standard for establishing a *prima facie* case of obviousness. Under the *KSR* rule, three basic criteria are considered. First, some suggestion or motivation to modify a reference or to combine the teachings of multiple references still has to be shown. Second, the combination has to suggest a reasonable expectation of success. Third, the prior art reference or combination has to teach or suggest all of the recited claim limitations. Factors such as the general state of the art and common sense may be considered when determining the feasibility of modifying and/or combining references.

The new Guidelines establishing standards for obviousness emphasize that Examiners "must provide a reasoned explanation as to why the invention as claimed would have been obvious," and are equally clear that "familiar lines of argument," e.g., a showing of unexpected results, a lack of reasonable expectation of success, and a teaching away from the claimed invention by the prior art, can still demonstrate the non-obviousness of a claimed invention. Applicants submit that the Examiner has not met this burden for the reasons discussed below.

The Office Action (on page 6) alleges that Mertens discloses all of the claim limitations of the apparatus recited in independent claim 1 and dependent claim 11 but acknowledges that the reference fails to disclose that the plug is held against the substance by a resilient biasing means. The Office Action asserts that Pesiri discloses a pressure vessel with an inner filter, which includes a spring loaded filter plate that can be used with the filter element of the device in

order to secure and seal the filter. The Action concludes, based on the foregoing, that it would have been obvious to the skilled artisan to substitute the spring loaded plug of Pesiri for the bottom plate on the filter of Mertens in order to arrive at the apparatus of the instant claims. Applicants respectfully disagree and submit that, for the reasons discussed above, Mertens fails to teach each and every claim limitation. The device of Mertens *requires* air nozzles 19 and 21 to be configured such that the gas is delivered directly towards the axial walls of the filter. In particular, nozzle 19 directs a first compressed air jet toward the inner surface of the filter, while the second air nozzle 19 is configured to deliver an air jet downward and toward the outer sides of the filter. Any change in configuration of the nozzles of Mertens would render the device inoperable for its intended purpose i.e. to blow air outward away from the filter and to blown air along the sides of the filter. One of skill in the art, by supplanting the spring loaded plug of Pesiri for the plug allegedly disclosed by Mertens, would not arrive at the apparatus of the present claims. Pesiri does not cure the defect of Mertens, and as such, the combination of the references fails to teach or suggest all of the recited claim limitations. In view of the foregoing, Applicants respectfully submit that the rejection is improper and request it be withdrawn.

Rejections under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejection of claims 1-4 and 27-31 under 35 U.S.C. §103 as allegedly obvious over Compton (U.S. 4,443,321; hereinafter "Compton") in view of Cham (U.S. 5,744,038; hereinafter "Cham").

The U.S. Supreme Court decision in *KSR International v. Teleflex Inc.* (82 USPQ 2d 1385), modified the standard for establishing a *prima facie* case of obviousness. Under the *KSR* rule, three basic criteria are considered. First, some suggestion or motivation to modify a reference or to combine the teachings of multiple references still has to be shown. Second, the combination has to suggest a reasonable expectation of success. Third, the prior art reference or combination has to teach or suggest all of the recited claim limitations. Factors such as the

general state of the art and common sense may be considered when determining the feasibility of modifying and/or combining references.

The new Guidelines establishing standards for obviousness emphasize that Examiners "must provide a reasoned explanation as to why the invention as claimed would have been obvious," and are equally clear that "familiar lines of argument," e.g., a showing of unexpected results, a lack of reasonable expectation of success, and a teaching away from the claimed invention by the prior art, can still demonstrate the non-obviousness of a claimed invention. Applicants submit that the Examiner has not met this burden for the reasons discussed below.

The Office Action (on page 7) alleges that Compton discloses an apparatus comprising an outer chamber, wherein the outer chamber is an autoclave; an inlet; a porous chamber within the outer chamber; and an outlet. The Action concedes, however, that while the apparatus of Compton includes a mechanism for turbulence, the document does not disclose that the turbulent means is generated by a drive means to rotate the porous chamber within the outer chamber. The Office Action correctly states that Compton "suggests a drive means with a propeller-type stirrer (propeller blades 44, motor 46)." The Office Action contends that Cham discloses a drive means that acts to rotate an inner porous chamber, as opposed to a stirring device and points to Figure 2, 46, column 3, lines 26-40 of the document in support of its findings. The Action concludes that it would have been obvious to the skilled artisan at the time of the invention to modify the device of Compton with a driven means, which attaches to and rotates the inner porous chamber.

Applicants respectfully disagree and submit that references, Compton and Cham, are not properly combinable for the reasons that follow. Applicants point to column 3, lines 24-32, of Compton which state: "During extraction, in accordance with the invention, particulate coal is volatilized into the supercritical gas mixture of the coal dissolution catalyst and the secondary solvent. The catalyst contributes to the breakdown of the coal structure and volatilization of the resulting coal fragment molecules occurs simultaneously during this high yield extraction. The dissolved volatilized material are removed in the gas phase leaving behind the inorganic materials." As can be seen in Figure 2 of Compton, the turbulence means is an overhead stirring

device comprising a motor (46) and propeller blades (44). Figure 2 clearly shows that the propeller blades are located *above* the porous chamber (42). Applicants point to column 4, lines 23-27, which state: "*Propeller blades 44 rotated by means of motor 46 stir the gas phase located just above the porous chamber 42.* The jacket controlled by controller 55 gradually heats the autoclave to temperature while *the gas is stirred by means of propeller blades 44* [emphasis added]."

The emphasis for the location i.e., above the porous chamber and utility (to stir or agitate the gas in the headspace) of the propeller blades is reiterated throughout the document e.g., column 5 at lines 67-68 and column 6 at lines 11-12. In view of the foregoing, Applicants submit that there would be no technological motivation for the skilled artisan to engage in the modification proposed by the Office Action.

The inner porous chamber of Cham is rotated by means of a spinner, which can be rotably mounted relative to the same (column 3 at lines 32-34 of the document). The inner porous chamber of Compton 42 is located within the autoclave reactor 30. The metering pump 34 injects liquid solvent into from the tank 48 into the reactor 30 through inlet 36. The gas phase is incrementally removed and decompressed by means of a pressure reducing valve 53. As discussed above, the apparatus is intended for the removal of volatilized matter by means of the pressure reducing valve 53. Thus, the stirring/turbulence element of Compton is in physical contact with only gas phase molecules and is used to create turbulence in the gas phase. By modifying the turbulent means of Compton with that of Cham, in order to rotate the inner porous chamber, the molecules in the liquid phase and the particulate coal within the porous chamber, at best, would be mixed. The modification proposed by the Office would destroy the intent, purpose, and function of the propeller blades, which is to directly agitate gaseous molecules in the headspace located above the pressure reducing valve 53 (refer to Figure 2 of Compton). Thus, there would be a disincentive to engage in the modification proposed by the Office Action. A 35 U.S.C. § 103(a) rejection based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference, is not proper and a *prima facie* case of obviousness cannot be made. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir.

1984). Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection.

Rejections under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejection of dependent claim 10 under 35 U.S.C. §103(a) as allegedly being obvious over Compton (U.S. 4,443,321; hereinafter "Compton") in view of Cham (U.S. 5,744,038; hereinafter "Cham"), as applied to independent claim 1, in further view of Osdor (U.S. 3,734,160; hereinafter "Osdor"), Garrett et al. (U.S. 4,452,701; hereinafter "Garrett"), Cole (U.S. 6,000,625; hereinafter "Cole"), and Ohno (U.S. 2003/0151176; hereinafter "Ohno").

The U.S. Supreme Court decision in *KSR International v. Teleflex Inc.* (82 USPQ 2d 1385), modified the standard for establishing a *prima facie* case of obviousness. Under the *KSR* rule, three basic criteria are considered. First, some suggestion or motivation to modify a reference or to combine the teachings of multiple references still has to be shown. Second, the combination has to suggest a reasonable expectation of success. Third, the prior art reference or combination has to teach or suggest all of the recited claim limitations. Factors such as the general state of the art and common sense may be considered when determining the feasibility of modifying and/or combining references.

The new Guidelines establishing standards for obviousness emphasize that Examiners "must provide a reasoned explanation as to why the invention as claimed would have been obvious," and are equally clear that "familiar lines of argument," e.g., a showing of unexpected results, a lack of reasonable expectation of success, and a teaching away from the claimed invention by the prior art, can still demonstrate the nonobviousness of a claimed invention. Applicants submit that the Examiner has not met the burden of establishing a *prime facie* case of obviousness for the reasons discussed below.

In particular the Office Action alleges (on page 11) that because Osdor discloses that baffle plates are known to increase turbulence; Garrett describes that an increase in turbulence is

known to increase the rate of dissolution; Cole discloses that a lack of turbulence may be remedied by installing additional baffles; and Ohno discloses baffles on the inner surface of an outer chamber that aid in turbulence it would have been obvious to the skilled artisan to modify Compton in order to arrive at the claimed invention.

For reasons set forth above, Applicants respectfully submit that the references, Compton and Cham, are not properly combinable or modifiable as the combination would destroy the intended function of the apparatus of Compton. The issue of adding baffles to the inner surface of the outer chamber in the region between the porous chamber and the wall of the outer chamber, as recited in claim 10, is not germane to the patentability of claim 10, as a *prima facie* showing of obviousness has not been established with regard to independent claim 1.

Furthermore, Garrett generally discloses a device for treatment of sewage. Cole generally discloses a device for irrigating crops. Ohno generally discloses an inline degassing apparatus for removing solid solution gases as well as nonmetallic inclusions from molten metal. It is axiomatic that one cannot simply use the Applicants' disclosure as a "blueprint" to reconstruct, by hindsight, Applicants' claim. See, e.g., Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 227 U.S.P.Q. 543 (Fed. Cir. 1985). As the references combined do not teach all of the elements of the present claims, nor is there provided the motivation to combine or the expectation of success, no *prima facie* case of obviousness has been established. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

In re Application of:
Foster et al.
Application No.: 10/552,390
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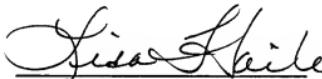
PATENT
Atty Docket No.: MAP1130

CONCLUSION

In view of the amendments and above remarks, it is submitted that the claims are in condition for allowance, and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicants' undersigned representative if there are any questions relating to this application.

Please charge Deposit Account No. 07-1896 in the amount of \$130.00 to cover a One Month Extension of Time, large entity. Applicants believe that no additional fee is deemed necessary with the filing of this paper. However, the Commissioner is authorized to charge any fees deemed necessary with the filing of this paper, or credit any overpayments, to Deposit Account No. 07-1896 referencing the above-identified docket number.

Respectfully submitted,


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